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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/069,741	02/26/2002	Delphine Legrand	FR 000067	5244
24738 7590 05/17/2007 PHILIPS ELECTRONICS NORTH AMERICA CORPORATION INTELLECTUAL PROPERTY & STANDARDS 1109 MCKAY DRIVE, M/S-41SJ SAN JOSE, CA 95131			EXAMINER AGHDAM, FRESHTEH N	
			ART UNIT 2611	PAPER NUMBER
			MAIL DATE 05/17/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/069,741

Applicant(s)

LEGRAND ET AL.

Examiner

Freshteh N. Aghdam

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 28 February 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Response to Arguments*

Applicant's arguments filed 2/28/2007 have been fully considered but they are not persuasive.

Applicant's Argument(s): Regarding claims 1 and 3-10, applicant argues that the claimed invention is not taught or suggested by the combination of Morelli and De Le'on "calculation means for calculating for the initial sequence and the modified sequences a mean difference between the initial or modified phases and the phases produced by the corresponding straight line equation, said final sequence being formed by the sequence whose mean difference is minimal."

Examiner's Response: Regarding applicant's argument set forth above, examiner respectfully disagrees because Morelli discloses detecting and correcting phase jumps comprises modifying the initial (e.g. observed or unwrapped) sequence so as to produce a plurality of modified sequences, which each compensate for a phase jump configuration; and consequently, forming the final sequence (Pg. 107, Section 4.1, Eq. 21-22). Also, applying the Tretter algorithm to the initial phase sequence to obtain the straight-line equation by employing the least square methods (Section 4.1). One of ordinary skill in the art would clearly recognize that **in general** employing an adaptive algorithm for estimation purposes such as least square algorithms (e.g. LS, LMS, and RLS) is well known in the art and it is performed by iteratively determining the curve or line that best describes the relationship between expected and observed sets of data

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and minimizing the sum of the errors squared by keep modifying the observed data and until the algorithm converges (e.g. mean difference or error metric is at its minimum value) as it is evidenced by De Le'on II (Col. 1, Lines 28-60). Below is another reference disclosed to clarify this issue:

Lindquist et al (US 2002/0071506) see paragraph 33; and Numerical Recipes in C, the art of scientific computing, 2<sup>nd</sup> edition, Press et al.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 3-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morelli et al, and further in view of De Le'on II et al (US 5,553,014).

As to claims 1, 4, and 6-7, Morelli discloses a communication system comprising at least a transmitter and a receiver intended to receive symbols coming from a phase shift keying modulation (Pg. 103, Abstract), and comprising estimation means for estimating a frequency error (Pg. 103, Abstract) relating to a symbol based on a sequence symbol phases (Pg. 107;  $\arg[z(k)]$ ), characterized in that said receiver comprises calculation means for calculating a phase sequence, called an initial sequence (Pg. 107, Col. 1,  $\arg[z(k)]$ ), based on decision made on symbols, and means for detecting and correcting phase jumps in this initial sequence (i.e. by unwrapping the

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sequence), to supply a phase sequence, called final sequence (i.e. a new sequence  $[\Phi(k)]$ ; pg. 107, Col. 1-2), to said frequency error estimation means (i.e.  $f^{\wedge}d$ ; Pg. 107, Section 4.1, Eq. 21-22). Morelli further discloses forming the final phase sequence from an initial sequence, wherein the final sequence is the initial sequence that is corrected for phase jumps (Pg. 107, Eq. 18-22) and applying the Tretter algorithm to the initial phase sequence to obtain the straight-line equation by employing the least square methods (Pg. 107, Section 4.1). Morelli is not explicit about forming the final phase sequence by modifying the initial sequence so as to produce a plurality of modified sequences, which each compensates for a phase jump configuration, calculating straight line equations for the initial and modified sequences; calculating the mean difference between the sequences and the straight line equations; and obtaining the final sequence by the sequence whose mean difference is minimal. One of ordinary skill in the art would clearly recognize that employing an adaptive algorithm for estimation purposes such as least square algorithms such as LS, LMS, and RLS is well known in the art and it is done by iteratively determining the curve or line that best describes the relationship between expected and observed sets of data and minimizing the sum of the errors squared by keep modifying the observed data and until the algorithm converges (e.g. mean difference or error metric is at its minimum value), which is more accurate comparing to the fixed method counterpart as it is evidenced by De Le'on II (Col. 1, Lines 28-60). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teaching of De Le'on II with Morelli in order to accurately estimate the final

sequence, wherein the final sequence is the initial sequence that is corrected for phase jumps by iteratively modifying the initial sequence and minimizing the error metric.

As to claims 3 and 8, Morelli discloses that the initial sequence ( $\arg [z(k)]$ ) is modified (i.e. unwrapped) phase group by phase group (Pg. 107, Col. 1-2).

As to claim 5, Morelli discloses that the initial sequence ( $\arg [z(k)]$ ) is modified (i.e. unwrapped) phase group by phase group (Pg. 107, Col. 1-2).

As to claim 9, Morelli and Le'on disclose all the subject matter claimed in claim 7, except for implementing the steps of a method of detecting and correcting phase jumps by a computer program in a processor. One of ordinary skill in the art would clearly recognize that implementing the steps of a method of detecting and correcting phase jumps by a computer program in a processor is well known in the art.

As to claim 10, Morelli and Le'on disclose all the subject matter claimed in claim 6, except for implementing the steps of a method of detecting and correcting phase jumps by a computer program in a processor. One of ordinary skill in the art would clearly recognize that implementing the steps of a method of detecting and correcting phase jumps by a computer program in a processor is well known in the art.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within

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TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Freshteh N. Aghdam whose telephone number is 571-272-6037. The examiner can normally be reached on 9:00-5:30.

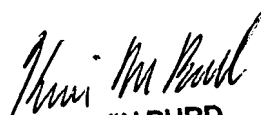
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh Fan can be reached on 571-272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Freshteh Aghdam  
Examiner  
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May 3, 2007

  
**KEVIN BURD**  
**PRIMARY EXAMINER**